Comparing the effectiveness of intensive residential rehabilitation in Traumatic Brain Injury (TBI) and Cerebrovascular Accident (CVA) using the Mayo-Portland Adaptability Inventory

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INTRODUCTION

In general, it has been reported that care on a stroke unit, compared to care on a general ward, improves long-term survival and functional state, as well as increasing the proportion of patients who are living at home 5 years post-stroke (Indredavik et al., 1997; Candellise et al., 2007). This has been used as evidence to suggest that stroke services should be separated from services for other forms of acquired brain injury (ABI); but is this really necessary?

No studies appear to have addressed the question as to whether an ABI service (designed primarily for traumatic brain injury – TBI) can provide similar benefits for those who have had a cerebrovascular accident (CVA) and those with TBI.

The ABI services, investigated in this study, use interventions based in an assessment of the individual’s neurological and neuropsychological deficits by a psychology led interdisciplinary team. The person-centred rehabilitation programmes take into account these deficits. Management of behaviour that challenges is based on the principles of behavioural psychology, goal setting is used, and compensatory strategies are developed with the individual. The ultimate goal of this holistic approach is to enable the person to return to as independent and participatory a life as possible (Oddy & Ramos, in press).

The efficacy of intensive residential rehabilitation in helping individuals with ABI to achieve mood and behavioural stability, improve cognitive skills and develop a consistent schedule of activity that enables increased participation in society has been well established (e.g. Altman et al, 2010). However these studies have involved samples of individuals with mixed ABI aetologies (e.g. TBI, CVA, hypoxia, etc.).

What has not been explored is whether those with CVA and those with TBI would benefit equally from admission to a holistic neurobehavioural rehabilitation setting.

RESULTS

PAIR comparison of outcome measures of TBI and CVA patients with ABI

Table 1 shows the demographics of all service users who fulfilled the requirements of the present study. However, as is common with outcome studies, at the time of analysis not all of the service users had complete sets of data. Therefore, the final analysis was conducted on MPAI-4 data of 214 individuals (TBI = 58, CVA = 52, n = 105) were included.

Table 1. Demographic characteristics of participants

<table>
<thead>
<tr>
<th></th>
<th>TBI</th>
<th>CVA</th>
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</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>38.78</td>
<td>51.95</td>
</tr>
<tr>
<td>Gender</td>
<td>Male 203</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Female 41</td>
<td>39</td>
</tr>
<tr>
<td>Time Since Injury (years)</td>
<td>5.67</td>
<td>5.97</td>
</tr>
<tr>
<td>Length of Stay (months)</td>
<td>2.48</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Note. MPAI-4 scores were reversed, such that higher scores reflect better outcomes.

IMPLICATIONS

- Both those with TBI and those with CVA show comparable improvements across all indices measured.
- The results suggest that an intensive residential programme is equally effective for TBI and CVA and therefore support the use of a holistic neurobehavioural rehabilitation model for both sufferers of stroke and TBI.
- Lack of treatment control group: As there is no treatment control group we cannot be certain that the effects found here are a direct result of the intervention. We also cannot account for any levels of spontaneous recovery which may have occurred.
- Use of outcome measures: There may have been a degree of underestimation of change inherent in the use of the MPAI-4 at different stages of rehabilitation.

LIMITATIONS

- Lack of treatment control group: As there is no treatment control group we cannot be certain that the effects found here are a direct result of the intervention. We also cannot account for any levels of spontaneous recovery which may have occurred.
- Use of outcome measures: There may have been a degree of underestimation of change inherent in the use of the MPAI-4 at different stages of rehabilitation.

CONCLUSION

Overall the results suggest that an intensive community based, residential rehabilitation programme is equally effective for TBI and CVA. In times of economic constraint, it is hard to justify two separate services if one can benefit both groups satisfactorily.

References